In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising an input buffer for buffering an analog signal and an ADC (analog-to-digital converter) for converting ~~with adjustable bandwidth filtering functions, the ADC being disposed in an AFE (analog front end) device of a LCD controller to convert an~~ the analog signal into a digital signal, the ADC having the adjustable bandwidth filtering functions and comprising:

a capacitor for sampling and holding the analog signal; and

a switch module serially connected to the capacitor, the switch module comprising a plurality of transistor switches connected in parallel, wherein the switch module selects, according to a selection code, at least one of the transistor switches as an equivalent resistor to constitute a filter circuit together with the capacitor.

Claim 2 (Currently Amended): The ~~ADC~~ AFE device according to claim 1, wherein the selection code is a one-of-N code, and one of the transistor switches is selected as the equivalent resistor according to the one-of-N code.

Claim 3 (Currently Amended): The ~~ADC~~ AFE device according to claim 1, wherein the selection code is a thermometer code, and one of the transistor switches is selected, or multiple ones of the transistor switches connected in parallel are selected as the equivalent resistor according to the thermometer code.

Claim 4 (Currently Amended): The ~~ADC~~ AFE device according to claim 1, further comprising a switch serially connected to the capacitor.

Claim 5 (Currently Amended): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising an input buffer for buffering an analog signal and an ADC (analog-to-digital converter) for converting the analog

signal into a digital signal ~~with adjustable bandwidth filtering functions, the input buffer being disposed in an AFE (analog front end) device of a LCD controller to buffer an analog signal~~, the input buffer having the adjustable bandwidth filtering functions and comprising:

a current source; and

a transistor module serially connected to the current source to form a source follower, the transistor module comprising a plurality of transistors connected in parallel, wherein the transistor module selects, according to a selection code, at least one of the transistors to be serially connected to the current source to form a filter circuit.

Claim 6 (Currently Amended): The input buffer ~~AFE device~~ according to claim 5, wherein the selection code is a one-of-N code, and one of the transistors is selected to be serially connected to the current source according to the one-of-N code.

Claim 7 (Currently Amended): The input buffer ~~AFE device~~ according to claim 5, wherein the selection code is a thermometer code, and one of the transistors is selected or multiple ones of the transistors are selected to be connected in parallel with each other or one another and then to be serially connected to the current source according to the thermometer code.

Claim 8 (Currently Amended): The input buffer ~~AFE device~~ according to claim 5, wherein the transistor module has an input terminal serially connected to an impedance.

Claim 9 (Currently Amended): The input buffer ~~AFE device~~ according to claim 8, wherein the impedance is equivalent to and implemented by a transistor switch.

Claim 10 (Currently Amended): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising an input buffer for buffering an analog signal and an ADC (analog-to-digital converter) for converting the analog signal into a digital signal ~~with adjustable bandwidth filtering functions, the input buffer being disposed in an AFE (analog front end) device of a LCD controller to buffer an analog signal~~, the input buffer having the adjustable bandwidth filtering functions and comprising:

a transistor; and

a current source module serially connected to the transistor to form a source follower, the current source module comprising a plurality of current sources connected in parallel to each other or one another, wherein the current source module selects, according to a selection code, at least one of the current sources to be serially connected to the transistor to form a filter circuit.

Claim 11 (Currently Amended): The input buffer ~~AFE device~~ according to claim 10, wherein the selection code is a one-of-N code, and one of the current sources is selected to be serially connected to the transistor according to the one-of-N code.

Claim 12 (Currently Amended): The input buffer ~~AFE device~~ according to claim 10, wherein the selection code is a thermometer code, and one of the current sources is selected or multiple ones of the current sources are selected to be connected in parallel with each other or one another and then to be serially connected to the transistor according to the thermometer code.

Claim 13 (Currently Amended): The input buffer ~~AFE device~~ according to claim 10, wherein the transistor has an input terminal serially connected to an impedance.

Claim 14 (Currently Amended): The input buffer ~~AFE device~~ according to claim 13, wherein the impedance is equivalent to and implemented by a transistor switch.

Claim 15 (New): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising:

an input buffer for buffering an analog signal; and

an ADC (analog-to-digital converter) for converting the analog signal into a digital signal;

wherein at least one of the input buffer and the ADC has the adjustable bandwidth filtering functions.

Claim 16 (New): The AFE device of claim 15, wherein the ADC comprises:

a capacitor for sampling and holding the analog signal; and

a switch module serially connected to the capacitor, the switch module comprising a plurality of transistor switches connected in parallel, wherein the switch module selects,

according to a selection code, at least one of the transistor switches as an equivalent resistor to constitute a filter circuit together with the capacitor.

Claim 17 (New): The AFE device of claim 16, wherein the selection code is a one-of-N code, and one of the transistor switches is selected as the equivalent resistor according to the one-of-N code.

Claim 18 (New): The AFE device of claim 16, wherein the selection code is a thermometer code, and one of the transistor switches is selected, or multiple ones of the transistor switches connected in parallel are selected as the equivalent resistor according to the thermometer code.

Claim 19 (New): The AFE device of claim 16, further comprising a switch serially connected to the capacitor.

Claim 20 (New): The AFE device of claim 15, wherein the input buffer comprises:

a current source; and

a transistor module serially connected to the current source to form a source follower, the transistor module comprising a plurality of transistors connected in parallel, wherein the transistor module selects, according to a selection code, at least one of the transistors to be serially connected to the current source to form a filter circuit.

Claim 21 (New): The AFE device of claim 20, wherein the selection code is a one-of-N code, and one of the transistors is selected to be serially connected to the current source according to the one-of-N code.

Claim 22 (New): The AFE device of claim 20, wherein the selection code is a thermometer code, and one of the transistors is selected or multiple ones of the transistors are selected to be connected in parallel with each other or one another and then to be serially connected to the current source according to the thermometer code.

Claim 23 (New): The AFE device of claim 20, wherein the transistor module has an input terminal serially connected to an impedance.

Claim 24 (New): The AFE device of claim 15, wherein the input buffer comprises:

a transistor; and

a current source module serially connected to the transistor to form a source follower, the current source module comprising a plurality of current sources connected in parallel to each other or one another, wherein the current source module selects, according to a selection code, at least one of the current sources to be serially connected to the transistor to form a filter circuit.

Claim 25 (New): The AFE device of claim 24, wherein the selection code is a one-of-N code, and one of the current sources is selected to be serially connected to the transistor according to the one-of-N code.

Claim 26 (New): The AFE device of claim 24, wherein the selection code is a thermometer code, and one of the current sources is selected or multiple ones of the current sources are selected to be connected in parallel with each other or one another and then to be serially connected to the transistor according to the thermometer code.

Claim 27 (New): The AFE device of claim 24, wherein the transistor has an input terminal serially connected to an impedance.